
THE FLOW STATE IN YOUNG BASKETBALL PLAYERS

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ABSTRACT. The flow-feeling theory helps in understanding why people do activities in maximum performance and extremely motivated. This theory is composed of 9 dimension/characteristics. Therefore, the aim of this study was to analyze qualitatively the flow feeling in young basketball players. The study sample of 59 athletes from 5 different teams from the Brazil Southeast. Being two of the teams considered elite teams. We used a semi structured interview and a questionnaire to collect general data about the athletes. To evaluate the interview was used the method of content analysis. The results show that there is five dimensions most frequently cited by athletes (autotelic experience, challenge-skill balance, clear goals; sense of control; concentration on the task at hand). And three other less mentioned (transformation of time; action-awareness merging, loss of self-consciousness). Some speeches indicate to there can be a state of flow on the team.

Keywords: Flow; basketball; sport psychology.

O ESTADO *FLOW* EM JOGADORES JOVENS DE BASQUETEBOL

RESUMO. A teoria do *flow feeling* auxilia na melhor compreensão do comportamento de algumas pessoas que realizam certas atividades com máximo desempenho e alto grau de motivação. Esta teoria é composta por nove dimensões/características. Com isso, o objetivo do presente estudo foi analisar qualitativamente o sentimento de *flow* em jogadores de basquetebol pertencentes às categorias de base. A amostra do estudo foi de 59 atletas de cinco diferentes equipes da região Sudeste, sendo duas dessas equipes consideradas de elite. Utilizou-se a entrevista semiestruturada e um questionário para coletar dados gerais sobre os atletas. Para avaliar as entrevistas utilizou-se o método de análise de conteúdo. Os resultados apontam que existem cinco dimensões mais frequentemente citadas pelos atletas (experiência autotélica; equilíbrio desafio-habilidade; objetivos claros; controle absoluto das ações e concentração intensa na tarefa). Há também outras três menos citadas (perda da noção do tempo; fusão entre ação e atenção e perda da autoconsciência). Alguns discursos apontaram para possível existência de um estado de *flow* da equipe.

Palavras-chave: *Flow*; basquetebol; psicologia do esporte.

EL ESTADO DE *FLOW* DE JÓVENES JUGADORES DE BALONCESTO

RESUMEN. La teoría del estado de *flow* ayuda a entender mejor el comportamiento de algunas personas que realizan algunas actividades con máximo rendimiento y alto grado de motivación. Esta teoría se compone de 9 dimensiones/características. Por lo tanto, el objetivo de este estudio fue analizar cualitativamente la sensación de *flow* en jugadores de baloncesto pertenecientes a las categorías base. La muestra del estudio se constituyó por 59 atletas de 5 equipos diferentes de la región sudeste de Brasil. Siendo dos de los equipos considerados equipos de élite. Se utilizó una entrevista semiestructurada y un cuestionario para la recolección de los datos generales sobre los atletas. Para evaluar las entrevistas se utilizó el método de análisis de contenido. Los resultados muestran que hay cinco dimensiones más frecuentemente citadas por los atletas (experiencia autotélica; equilibrio reto-habilidad; claridad de objetivos; control total de las acciones; concentración intensa en la tarea). Y otros tres menos mencionados (pérdida de la noción del

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tiempo; unión entre acción y atención; pérdida de la autoconsciencia). Algunos discursos indicaron también una posible existencia de un estado de *flow* del equipo.

Palabras clave: *Flow*; baloncesto; Psicología del deporte.

The show of sports events, each day more fascinating, has significantly contributed to increase sports demands in their different dimensions. In this very same context, basketball has become one of the most practiced modalities worldwide (Paes, Montagner, & Ferreira, 2009). Since its creation, basketball has evolved and gone through several transformations concerning its rules, techniques and tactics. Such evolution has caused basketball to become a sport with a high level of technical complexity of movements (Okazaki, Rodacki, Sarraf, Dezan, & Okazaki, 2004).

Some other remarkable characteristics of the modality are specific requirements in relation to the time of performance of some actions, in addition to the constant contact between the athletes. For this reason, there is a demand for a great development of capacities and skills in the physical, technical and tactical levels, strengthening even more the need for a good psychological preparation (Deschamps, 2008). In the process of formation of young players, the requirements become even harder. According to De Rose Jr, Deschamps and Korsakas (2001), psychological factors such as motivation, anxiety and stress management are of great importance to the maintenance of emotional balance necessary to good performance and learning.

For this reason, applied Sports Psychology (SP) has been seeking to investigate what environmental and personal factors drive the participation and performance of athletes in sports even in face of a so demanding context. Mihalyi Csikszentmihalyi, from the 1970s, started to study a consciousness state in which the practitioner finds himself or herself in a productive and motivated effort, with total immersion into the activity (Bakker, Oerelmans, Demerouti, Slot, & Ali, 2011). This phenomenon was called flow-feeling, also known as zone or simply flow. This theory helps understand better why some people perform certain activities with their maximum capacity and a high level of motivation (Miranda & Bara Filho, 2008).

Jackson and Csikszentmihalyi (1999) defined it as

an optimum psychological state in which athletes and practitioners of physical activity manage to abstract themselves from their performance completely, to the point that their sensations, perceptions and actions are experienced in an extremely positive way, and they apparently come to achieve a good performance in an almost automatic manner.

The flow theory is composed of nine dimensions/characteristics: 1) Challenge-skill balance refers to the harmony between the challenge in which the athlete is involved and his or her capacity to respond to it accordingly. 2) In Concentration on the task at hand the focus is all on the task and on the present. 3) Clear goals relates to total clarity about the goal to be achieved and to the knowledge about what is essential in order to perform the activity successfully. 4) Unambiguous feedback is characterized by effective indicators through which athletes perceive clearly how their performance in the task is. 5) Action-awareness merging is about intense involvement in the activity and makes the athletes' actions totally spontaneous and automatic. 6) Sense of control refers to the perception of being in the control of the situation or, more precisely, to a lack of concern with losing control, typical in many situations in life. 7) Loss of self-consciousness is the inexistence of external and esthetic concerns, social consequence. The subject is totally absorbed by the activity. 8) Transformation of time is described in the literature as a certain temporal disorientation; some athletes report that time passed too fast, others report a much longer time than that that actually passed. 9) Autotelic experience consists of an experience that is rewarding in itself, involving a sense of deep enjoyment during the activity (Jackson & Csikszentmihalyi, 1999).

Considering flow in basketball specifically, few studies have been developed. Russel (2002) researched college athletes of various modalities, including basketball. He analyzed the factors that preceded, favored and interrupted the flow, without finding any statistically significant differences between these factors in the modalities researched. Other researches had basketball players in their

samples but did not have as objective the analysis and deepening of knowledge about flow in basketball, the target modality of the present study. (Jackson & Marsh, 1996; Kawabata & Mallett, 2011; Kawabata, Mallett, & Jackson, 2008; Murcia, Gimeno, & Coll, 2006).

According to Koehn and Morris (2014), there is also a need for searching understanding about the factors that favor the quality of psychological experiences related to the sport. Particularly in younger athletes, it is of great importance that mental skills are known in order to promote a positive development linked to the sport and to competition. (Koehn, Morris, & Watt, 2013).

Considering such needs regarding the flow feeling in young athletes, the objective of this study was to analyze qualitatively the flow feeling in basketball players from grassroots categories.

Method

Sample

The sample of this study consisted of 59 male athletes, all basketball players from 5 different teams that represent clubs from the southeast region. Two of these teams are considered elite teams, because they participate in the most important adult championship currently held in Brazil and, in addition, play for the title in their states in the grassroots categories researched. The average age was 17.90 years old (standard deviation of 2.10 years). The sample was composed of players of all positions. The athletes' average time of practice in the modality was 5.13 years (standard deviation of 2.48 years). Among the athletes researched, only 2 had competed at regional level, 37 at state level, 16 at national level, and 4 athletes had competed at international level.

Exclusion criteria

The sample did not include athletes with less than 2 years of practice in the modality, based on the belief that the general requirement, with highlight to the basketball technique and tactics, implies that, for one to have control over actions (game foundations), good level of concentration for the development of the game tactics (decision making) and to meet other demands, a longer time of practice is necessary. Moreover, the longer the time of practice, the greater the possibilities of flow. It did not include athletes who were not training regularly the modality either, for the belief that the athlete who was not involved in the practice might not have in his memory the concrete experiences of easy identification of the flow.

Instruments

General Questionnaire – Each athlete answered a general questionnaire containing 16 questions about age, time of practice, schooling level, number of training sessions per week, position in basketball, and the most important competition disputed. Then, each athlete was called individually to a private room where they answered a semi-structured interview prepared based on Massarela and Winterstein (2009) and Sena Junior (2012). The semi-structured interview was chosen for being a technique that, from basic questions, enables the generation of questions that arise spontaneously due to the interviewees' answers, according to their thoughts and experiences (Triviños, 1987).

This interview followed a script with 9 basic questions linked to the dimensions of the flow. The interviewees manifested their opinion orally. The interviews were recorded on a GPx digital recorder (model MX-425). The questions that served as a basis were: 1) Why are you currently playing basketball? 2) In general terms, what are your feelings during a basketball match (what do you feel)? 3) What do you think about while playing basketball? 4) How do you behave when the game is too easy or too hard? 5) During a match, do you think about victory only, or focus on every action/movement? 6) During a match or training session, how do you deal with out-of-court situations? (For instance: crowd noises) 7) We would like you to talk about a game that was remarkable to you, the one in which you did your best job in your entire life. 8) In those memorable matches, on what level of confidence were you playing? Were the moves easier to make? 9) Some players say that a big game finishes too quickly,

that it does not even seem that they stayed for nearly two hours in the court. Do you feel that this has ever happened to you?

Procedures

The research project in question was previously submitted to the Ethics and Research Committee of the Pro-Rectorate of Research of the Federal University of Juiz de Fora, being approved under legal opinion No 303/2011 of December 15, 2011.

Initially, an authorization from the coach or from the director of the club the athlete represented was requested. After acceptance, date and time were scheduled, taking into account the availability of the team so that the routine of training sessions and/or games were not affected. Data was collected in a private environment at the athletes' clubs or accommodations.

Gathered into groups, the athletes were provided with an oral explanation about some details of the research. The researcher also reinforced information about risks, voluntary participation and data secrecy.

Subsequently, the athletes who accepted to participate in the research read, completed and signed a free consent form. This done, they answered the general questionnaire, and then, one by one, the athletes went to a room reserved to the individual interview.

The interviews total recorded time was 05 hours 46 minutes and 46 seconds. They were later transcribed and exhaustively studied for familiarity and data analysis purposes.

Data analysis

The data collected from the questionnaire was arranged in an electronic spreadsheet in which descriptive statistics was performed from calculations of the measures of central tendency (mean, median and mode), of the standard deviation, and of the maximum and minimum values.

For the interviews, the content analysis method was used, which, according to Bardin (2001), it is, by definition:

A set of techniques for analysis of communications. It is not an instrument, but a range of accessories; or with a greater rigor, it will be just one instrument, but marked by a great disparity of forms and adaptable to a really vast field of application: communications (p. 37).

Bardin (2011) organizes content analysis chronologically in three different phases: pre-analysis; material exploration; results treatment, inference and interpretation.

Pre-analysis is the organization phase itself. It aims for the organization of the material that is being worked. Thus, what Bardin (2011) called skimming or first reading was carried out as well, with a great receptiveness to all ideas, reflections and hypotheses. In this phase, all cases were comprehensively observed towards learning about them and reflecting about the material obtained. (Bardin, 2011; Gomes, 2010).

Material exploration is the longest stage. During it, the transcribed interviews are cutout in order to divide the text into record units (Bardin, 2011). In this study, the units were later categorized according to each flow dimension.

The last phase comprehended the inference and interpretation stage. In this way, it was possible to transform the collected contents into quantitative data and/or reflexive analyses, through observations of the individual and general interviews. Thus, it is possible to conclude that the sentences said by the interviewees reveal the representations these subjects have built about their experiences and feelings concerning the flow state (Gomes, 2010).

Results and Discussion

The interviews provided data that would be later subjected to a careful analysis, in order to detect in the discourse the dimensions of and the way through which flow manifests during sports practice. This study is based on the concept of flow according to Csikszentmihalyi (1975) and the participants'

discourse allowed observing how said theory is perceived by the athletes, even though they are not familiar with the formal concept.

Some players narrate their experiences and exemplify what the theory says:

I love basketball because I love... I feel pleasure to play. Every time I touch the ball, I feel pleasure... I don't think about anything else, I think about playing, when I'm in the court, I just think about basketball (Athlete 4).

When I'm in the court, I'm fine, I'm tuned in, I'm on. I'm calm in the court... So I play more relaxed, calmer... During the game, I stay so focused that I kinda forget. I don't even hear anything. I pay more attention to the game (Athlete 5).

Challenge-skill balance: according to Csikszentmihalyi (1975, 1990), this dimension refers to an existing difficulty in the task and the ability/capacity a person has to perform it, or his or her capacity to face it. It was the second most often cited by the athletes, 57 in total, that is, 96.6%. It also appeared as the second dimension in number of record units. Comparing it with the other dimensions, it totaled 148 citations, accounting for 18.2% of the total. In this case, it was observed that only 2 athletes did not cite in the interview anything about such dimension. Next, some reports from the athletes are extracted for this dimension: *"The fact that you can overcome yourself is a big motivation to me" (Athlete 3); "When the game is harder I play better" (Athlete 29); "There's nothing better than a basketball match played score-by-score" (Athlete 49); "It's a big emotion to be able to participate in a tight match" (Athlete 55); "I like to play when the match is tough. It's neck and neck" (Athlete 57).*

From the speeches above, it is clearly noticeable that a more balanced game favors the athlete's access to the flow channel. It is possible to regard challenge as the trigger of other characteristics of an optimum psychological state. The analysis of the extracts cited allow inferring that the way the subject interprets his own sensations and emotions in hard moments also interferes with the flow. In this way, not only the challenges and skills objectively before the situation are important, but also how each athlete interprets his skills in face of the challenges. This is what determines the quality of the experience, whether the individual flows, feels bored or anxious; all of this is linked to his perception before the situation (Jackson, & Csikszentmihalyi, 1999).

Action-awareness merging: This dimension refers to the activity performed in a so immersive way by the person that it becomes spontaneous, automatic; in this case, most part of the psychic energy is focused on the performance of said activity, leaving almost no energy to process information that is not about the task. (Csikszentmihalyi, 1990; Jackson, & Csikszentmihalyi, 1999; Miranda, & Bara Filho, 2008).

Merging was little cited in the interviews, that is, if we analyze the record units, we will observe that it was one of the least often cited, with 27 cases, a total of 3.3%; 20 athletes mentioned it, which equals to 33.9% of the total. When extracting parts of the discourses, it is possible to exemplify how merging happens: *"you don't even think about what you're doing, you just go for it without thinking. All kinda natural" (Athlete 29); "During the game, I just do it" (Athlete 42); "Having played well... was something that happened naturally" (Athlete 59); "During the game, it seems that everything happens kinda automatically" (Athlete 1); "... for everybody, I think you wanna play 4 quarters of 30 minutes each, because you just don't get tired" (Athlete 41).*

The players interviewed showed what happens during the merging of psychic and physical processes, presenting the sensation that the movements are united to consciousness (Miranda, & Bara Filho 2008). Moreover, the absence of effort was cited as well and is part of the characteristic of the dimension for basketball players.

Clear goals: This dimension shows that clear goals serve to guide the individual for him or her to know what to do during a task. (Csikszentmihalyi, 1975, 1990; Jackson, & Csikszentmihalyi, 1999). In sports, just as in other fields of psychology, like the organizational one, coach and athletes set short, medium and long-term goals in order to follow them and use them as a guide to their future actions. In this research, 56 participants cited clear goals, what equals to 94.9% of the total of players, showing that this is something common in basketball. They were cited 96 times throughout the interviews with

all participants, totaling 11.9% of the RUs. These are some of the athlete's citations: *"everybody united for one single goal"* (Athlete 54); *"You go there to do what you've trained for"* (Athlete 1); *"I think much more about the reading matter than about following by the book the strategies set"* (Athlete 2); *"I picture in my mind what I'm going to do during the game"* (Athlete 23).

The reports confirm what the theory says about how goals and objectives make the athlete's thoughts during the game to stay focused only on performing the activity at hand in the best way possible towards success. The importance of a quality training session takes on a fundamental role in this dimension, because most part of the reports associates the game's clear goal with what has been trained. In this way, the athlete knows exactly what to do, making maximum effort.

Unambiguous feedback: According to Csikszentmihalyi (1990), this dimension allows for involvement in the action, so it does not require any analysis or reflection about the feedback itself. Thus, the athletes receive information (internal and external) about their performance, adjusting their actions and moves in order to adequate their decision making, goals, intensities (Miranda & Bara Filho, 2008).

The interviews somehow clarify how the subjects deal with external information, but internal feedback was reported in a very broad way: *"I was killing it, doing my job well"* (Athlete 7); *"In that game, everything went just fine"* (Athlete 24); *"The only thing (external) I care about in the court is to listen to the coach's instructions"* (Athlete 36); *"All information goes in easy"* (Athlete 49).

Unambiguous feedback was cited by 44 athletes, being the sixth dimension with the largest number of citations, and obtained a total of 68 RUs, accounting for 8.4% of the total. This does not represent a high number, but provides some clarifications. The athletes' citations pointed to a very general intrinsic feedback. The expectation was that the players reported that flow favored the correction of technical moves, attitudes, actions and decisions, among others. On the other hand, it was possible to observe that their extrinsic feedback has as main source the figure of the coach.

Concentration on the task at hand: This dimension describes the focus to the task that is being performed during the flow, focus which is totally placed on the task (Csikszentmihalyi, 1990). In the reports, 53 athletes cited this dimension, which composes 89.8% of the total of athletes interviewed and totaled 132 RUs, about 16.2% of the total. In this dimension, the discourses were: *"I can tune myself out and stay focused on the game as if I were training"* (Athlete 2); *"When I'm in the court, I think about basketball only"* (Athlete 4); *"I forget everything. I just think about playing"* (Athlete 20); *"In the match, I'm in the court, nothing out of the court exists to me"* (Athlete 41); *"When I'm in the court, it seems that all concerns, everything I left out there, it seems that it goes away"* (Athlete 50).

Through this dimension, it was possible to notice that, under the flow state, the athletes stay totally concentrated and their focus is entirely on the performance of the demands of basketball.

Sense of control: This dimension presents the control paradox, which to Csikszentmihalyi (1990) means to say that the person does not have the control over the action itself, but the possibility of control. According to the same author, it is an involving sensation for people during the flow and might come in the form of positive feedback, as shown in the following reports: *"I had to hold myself accountable for the game. And it worked out"* (Athlete 23); *"The ball was coming to my hands all the time so I just went for it"* (Athlete 7); *"I got confidence then I said: 'today is my day, let's kick it, let's draw fouls'. Always with positive thinking"* (Athlete 10). *"That moment we were doing fine in the game, we already knew everything was going to be fine and that we were going to win the game"* (Athlete 33); *"I didn't think I could fail anymore. Even if I threw it from the middle of the court my confidence would tell me that the ball would go through the basket"* (Athlete 45).

This dimension was cited in the interviews by 55 athletes, 93.2% of them, being the fourth one with the largest number of athletes citing it, and there was a total of 157 citations or 19.35% of the total, becoming the most present RUs in the discourse, appearing 8 times in the interview of one of the athletes, which shows that this is a dimension of great importance when it comes to the flow phenomenon.

The speeches made clear the relation of such dimension with the athlete's confidence. It is noticeable in some citations that the athletes felt unbeatable. Always with positive thinking and sure about the success in the performance of the actions of the game.

Loss of self-consciousness: In this dimension, self-perception disappears, causing athletes to immerse themselves into the activity, being both of them (athletes and action) one single unit. In this moment, they cease to perceive themselves as a sole being and begin to feel an integral part of their team (Csikszentmihalyi, 1990; Jackson & Csikszentmihalyi, 1999). Only 7 athletes cited this dimension, 11.2% of the total of athletes, and it appeared only 9 times in the interviews, about 1.1% of the total. *"You think so much about the game that you lose the sense of yourself"* (Athlete 5); *"When I'm in the court, like, a new world appears"* (Athlete 50); *"but it's a unique sensation, it seems that there's nothing to bother you there, you forget about people and focus on the game only"* (Athlete 38).

This dimension seems to identify a deeper flow state. Few athletes cited it. However, it shows that the athlete puts his energy into action, does not worry about his performance and about what the others might think, generating a feeling of unity.

Transformation of time: This dimension is about a change in time perception that can occur during the flow (Csikszentmihalyi, 1990). This dimension was cited by 30 athletes, something around 50.8% of the total number, and 31 record units appeared, 3.8% of the total of RUs. Some athletes cited it in as follows: *"You're like: 'wow, is this the last quarter yet? Is this the last ball?'... It flies"* (Athlete 1); *"it seems that each moment is in slow motion"* (Athlete 2); *"Sometimes, when I'm in the court, 2 hours pass and I feel like it was only 5 minutes. I lose the sense of time when I'm playing"* (Athlete 26); *"It's a different sensation. You stay there two hours in the match and it seems that it passed too fast"* (Athlete 51).

Most athletes who cited such dimension perceived the time passing much faster than usual, although some of them reported the sensation that some moments of the game passed too slowly. With this, it is possible to infer that the relationship of the basketball players with time indicates that this perception is quite individual.

Autotelic experience: This dimension is a result of all previous dimensions described in the flow. The individual performs an activity without any external reward, but simply because the activity is rewarding in itself. In this way, what differs an autotelic experience is that the person focus his or her attention on the activity itself and not on the consequences of it (Csikszentmihalyi, 1990; Miranda & Bara Filho, 2008). This was the only dimension cited by all of the athletes; all 59 interviewees at some point of the interview cited it. It appeared 144 times, about 17.8% of the total, being the third dimension with the largest number of RUs.

This dimension usually appears clearly right in the first question of the interview, "why do you practice basketball?" Some of the answers to this question were: *"you being able to do well what you like is a really good sensation"* (Athlete 3); *"Because I like it. Because I like to play basketball. Because I feel pleasure in playing basketball"* (Athlete 9); *"Because I feel good when playing. I feel happy with my friends. This is what I like to do"* (Athlete 23); *"It's the happiest moment I have of the day, it's when I'm in the court"* (Athlete 26); *"... it's a sport I love, I have a huge pleasure in playing it"* (Athlete 36).

Though not directly investigated, it is known that some athletes interviewed received money rewards to practice the sport. Even so, all of the athletes talked about the pleasure in practicing basketball, even before the adversities, pressures and demands.

With the beginning of the analysis of such data and its interpretation in the light of the positive flow theory, it was observed that all 9 dimensions proposed by Csikszentmihalyi (1990) appeared in the discourse of the athletes. Autotelic experience was cited absolutely by all of the interviewees, whereas loss of self-consciousness by only seven out of the 59. However, regarding the RUs (Record units), Sense of control appeared more often in the interviews.

Tables 1, 2 and 3 illustrate all values found:

Table 1 – Number of athletes who cited the dimension and respective percentages.

Ranking	Flow Dimension	Nº of Athletes who cited it	Athletes perc. (%)
1	Autotelic experience	59	100
2	Challenge-skill balance	57	96,6
3	Clear goals	56	94,9
4	Sense of control	55	93,2
5	Concentration on the task	53	89,8
6	Unambiguous feedback	44	74,6
7	Transformation of time	30	50,8
8	Action-awareness merging	20	33,9
9	Loss of self-consciousness	7	11,2

Source: the author (2014).

The results found and presented in table 1 corroborate the findings of Massarela (2008), Gomes (2009) and Sena Junior (2011) concerning the flow dimensions. All these studies were developed with Brazilian athletes, the first two with street runners and the last one with volleyball players.

It is possible to consider the existence of a block with the first five dimensions found, which were common in the studies with the runners and volleyball athletes. The other three remaining dimensions, in turn, with a percentage virtually below 50% in all studies cited, would form another block. The unambiguous feedback dimension along with clear goals was studied as one single dimension by Massarela (2008), which raised difficulties to the clear analysis of said dimension. Another consideration to be made about the study of Massarela (2008) is that the loss of self-consciousness dimension was cited by 100% of the athletes. However, this finding of Massarela agrees with most studies found in the literature that were developed with similar methodology, predominantly qualitative (Bernier, Thieno, Codron, & Fournier, 2009; Chavez, 2008; Gomes, 2010; Jackson, 1996; Sena Junior, 2012; Sugiyama & Inomata, 2005). Table 2 displays the number of athletes and the respective percentages of flow dimensions. This table was taken and adapted from a review study that gathered five other studies with elite athletes (Swan, Keegan, Piggott, & Crust, 2012). The total number of athletes analyzed in these studies was 114, of several modalities.

Table 2 – Number of athletes who cited the dimension, and respective percentages (review article).

Ranking	Flow dimension	Nº of athletes who cited it	Athletes perc. (%)
1	Concentration on the task	92	80,7
2	Action-awareness merging	85	74,6
3	Sense of control	77	67,5
4	Autotelic experience	76	66,6
5	Unambiguous feedback	66	57,9
6	Clear goals	51	44,7
7	Challenge-skill balance	47	41,2
8	Loss of self-consciousness	34	29,8
9	Transformation of time	33	28,9

Source: Adapted from SWAN et al., 2012.

It is worth pointing out that the values found in the study developed with basketball players from grassroots categories (table 1) for the autotelic experience, challenge-skill balance, clear goals, Sense of control, unambiguous feedback and transformation of time dimensions are numerically higher than

data found in the systematic review (Table 2). The concentration on the task dimension had a slightly higher value in the present study with basketball players. The action-awareness merging and loss of self-consciousness dimensions had numerically higher values in the review study.

Such numerical differences can be partly explained by small adaptations done in the methods of each one of the qualitative works. In spite of such differences, however, it is not possible to disregard the analysis of said findings. In addition, the systematic review considered studies involving many elite sports, each one with a different characteristic, which certainly decreased the absolute values presented in table 2.

The high value of the autotelic experience dimension shows that all the athletes researched derive pleasure from practicing basketball. The same value was found in studies with street runners (Massarela, 2008; Sena Junior, 2012). According to Miranda and Bara Filho (2008), this characteristic does not determine the athlete's specific objective, which can be: train hard to be a champion... even so, the activity (in this case, train hard) absorbs the athlete and becomes intrinsically (unconsciously) rewarding (p. 58).

The low values found for the loss of self-consciousness and transformation of time dimensions are common in quantitative studies (Jackson & Marsh, 1996; López-Torrez, Torregrosa, & Roca, 2007; Vlachopoulos, Karageorghis, & Terry, 2000) and qualitative studies (Jackson, 1996; Sugiyama & Inomata, 2005; Gomes, 2009; Sena Junior 2012).

The difference found in the action-awareness merging dimension can be explained by the time of practice and competitive level of the athletes researched. According to Sugiyama and Inomata (2005), this dimension represents a deepened flow state.

Table 3- Total of record units (RUs), percentage in relation to the total of RUs, mean per athlete, maximum and minimum of citations by each one of the athletes

Rank	Flow dimension	RUs	Rus Perc. (%)	M	Max	Min
1	Sense of control	157	19,3	2,7	8	0
2	Challenge-skill balance	148	18,2	2,5	7	0
3	Autotelic experience	144	17,8	2,4	7	1
4	Concentration on the task	132	16,2	2,2	7	0
5	Clear goals	96	11,9	1,6	4	0
6	Unambiguous feedback	68	8,4	1,1	3	0
7	Transformation of time	31	3,8	0,5	2	0
8	Action-awareness merging	27	3,3	0,4	3	0
9	Loss of self-consciousness	9	1,1	0,1	2	0

Source: The author (2014).

Table 3 presents the amount of times that each dimension was cited, the percentage of each one of them, the citation per each athlete mean, the maximum and minimum number cited by each athlete. It is noticeable that the initial block of the first five dimensions repeat when compared with table 1, but some dimensions are ranked ahead in this table, because the repetition of the same dimension in the speech of some athletes elevate the number of RUs, making said dimension more representative in the flow overall sum.

In any other study, Sense of control was found as the most often cited dimension among the athletes. Through this finding, it is possible to assume that the high technical demands of basketball in grassroots categories can somehow cause an interference different from that of others sports with the flow state.

Even so, the Sense of control is among the most cited ones in other qualitative studies (table 2) involving other modalities. In this way, it can be said that few differences were found.

However, even though it is not the objective of the present study, some discourses exalt the possible existence of a flow state that is collective or passed on to the entire team:

It was in the opponent's house. Defensively, the whole team, including me, was going really well. Then I felt good and consequently passed that on to the offense, and everybody did fine and we won the game. My level of confidence was increasing. The whole team there... In that game, the collective made the individual do well and everybody got involved there, it was really cool. (Athlete 1).

...when we have this guy that can bring the team up is always good. The vibe, the atmosphere gets a lot better. (Athlete 19).

I think that if all the 11 are not doing well in the beginning and then comes this one and gives some energy, the other 11 will be fine. It's contagious. That's how it is. (Athlete 30).

I was doing my best, so they (the teammates) wanted to do their best too. (Athlete 44).

In that game, even this center that used to play with us managed to play really well, both defensively and offensively, because we were always encouraging him, 'let's go, the game is flowing'. And he was more reserved, and in that game even he had that crazy adrenaline, and we won. (Athlete 58).

The only study found that makes reference to the existence of a collective flow state is that by Bakker et al. (2011). According to this author, the existence of a same coach, a same opponent and a same environment can lead to a collective flow state. Furthermore, the author suggests that behaviors and attitudes can be transmitted to other athletes. The study by Bakker et al. (2011) was developed through the application of a questionnaire with 348 Dutch soccer players and came to the conclusion that this collective state is favored in matches that end with an even result or victory of one of the teams than in matches that end with a defeat.

This study, through the citations of some athletes, points this possible existence of a collective flow state in the team. Further researchers need to be developed with the exclusive aim to unveil such feeling in a collective level, as well as to deepen the knowledge about flow in other modalities and categories.

Final Considerations

Flow feeling in young basketball athletes presented some peculiar characteristics when compared with other sports. Sense of control was the most recorded flow dimension among the players researched. No other study with Brazilian athletes and with same methodology had found such a result. The demands and characteristics of the modality were attributed to that.

The athletes interviewed also reported the importance of being constantly challenged. Said characteristic favors other flow dimensions. The athletes' clear goals seem to direct their thoughts during the activity. Unambiguous feedback was reported only concerning its external source, and the coach was the main source of external information to the basketball player.

The least cited dimensions by the athletes were transformation of time, action-awareness merging and loss of self-consciousness. The present study did not manage to go deeper in the reason why these dimensions were little cited. However, it is possible to attribute two reasons that interfere with these results: such dimensions are not felt by the athletes or are not expressed in their discourse. Another interesting finding was noticing in the discourses a possible existence of a collective flow state or a contagious state in a team in certain moments of the game.

Finally, this study will be able to contribute to the comprehension of positive psychological aspects that involve the basketball game. Such knowledge favors the work of sports coaches and psychologists that desire to facilitate the flow state in young athletes.

References

- Bardin, L. (2011). *Análise de conteúdo*. São Paulo: Edições 70.
- Bakker, A. B., Oerlemans, W., Demerouti, E., Slot, B. B., & Ali, D. K. (2011). Flow and performance: A study among talented Dutch soccer players. *Psychology of Sport and Exercise*, 12(4), 442-450.
- Bernier, M., Thienot, E., Cordon, R., & Fournier, J. F. (2009). Mindfulness and acceptance approaches in sport performance. *Journal of Clinical Sport Psychology*, 25(4), 320.
- Chavez, E. J. (2008). Flow in sport: A study of college athletes. *Imagination, cognition and personality*, 28(1), 69-91.
- Csikszentmihalyi, M. (1975). *Beyond boredom and anxiety*. San Francisco: Josey-Bass.
- Csikszentmihalyi, M. (1990). *Flow: the psychology of optimal experience*. New York: Harper Perennial.
- De Rose Junior, D., Deschamps, S., & Korsakas, P. (1999). Situações causadoras de "stress" no basquetebol de alto rendimento: fatores competitivos. *Revista Paulista de Educação Física*, 13(2), 217-229.
- Deschamps, S. R. (2008). *Treinamento psicológico e sua influência nos estados de humor e desempenho técnico de atletas de basquetebol*. Tese de Doutorado, Escola de Educação Física e Esporte, Universidade de São Paulo, São Paulo.
- Gomes, S. S. (2010). *Quando o jogo flui: uma investigação sobre a Teoria do Fluxo no voleibol*. Dissertação de Mestrado, Faculdade de Educação Física e Desporto, Universidade Federal de Juiz de Fora, Juiz de Fora, 2010.
- Jackson, S. A., & Csikszentmihalyi, M. (1999). *Flow in Sports: the keys to optimal experiences and performances*. Champaign: Human Kinetics.
- Jackson, S. A., & Marsh, H. W. (1996). Development and validation of a scale to measure optimal experience: the flow state scale. *Journal of Sport & Exercise Psychology*, 18(1), 17-35.
- Jackson, S. A., & Roberts, G. C. (1992). Toward a conceptual understanding of peak performance. *The Sport Psychologist*, 6, 156-171.
- Kawabata, M., & Mallett, C. J. (2011). Flow experience in physical activity: Examination of the internal structure of flow from a process-related perspective. *Motivational and Emotion*, 35, 393-402.
- Kawabata, M., Mallett, C. J., & Jackson, S. A. (2008). The Flow State Scale-2 and Dispositional Flow Scale-2: Examination of factorial validity and reliability for Japanese adults. *Psychology of Sport and Exercise*, 9, 465-485.
- Koehn, S., & Morris, T. (2014). The effect of performance context and skill level on the frequency of flow experiences. *European Journal of Sport Science*, 14(S1), 478-486.
- Koehn, S., Morris, T., Watt, & A. P. (2013). Correlate of Dispositional and State Flow in Tennis Competition. *Journal of Applied Sport Psychology*, 25, 354-369.
- López-Torres, M., Torregrosa, M., & Roca J. (2007). Características del flow, ansiedad, y estado emocional, en la relación con el rendimiento de deportistas de elite. *Cuadernos de psicología del deporte*, 7(1), 25-44.
- Massarela, F. L. (2008). *Motivação intrínseca e o estado mental flow em corredores de rua*. Dissertação de mestrado em Educação Física, Faculdade de Educação Física, Universidade Estadual de Campinas, Campinas, 2008.
- Massarela, F. L., & Winterstein, P. J. (2009). A motivação intrínseca em e o estado mental flow em corredores de rua. *Movimento*, 15(2), 45-68.
- Miranda, R., & Bara Filho, M. G. (2008). *Construindo um atleta vencedor: Uma abordagem psicofísica do esporte*. Porto Alegre: Artmed.
- Murcia, J. A. M., Gimeno, E. C., & Coll, D. G. (2006). Motivación autodeterminada y flujo disposicional en el deporte. *Anales de Psicología*, 22(2), 310-317.
- Okasaki, V. H. A., Rodacki, A. L. F., Sarraf, T. A., Dezan, V. H., & OKAZAKI, F. H. A. (2004). Diagnóstico da especificidade técnica do basquetebol. *Revista Brasileira de Ciência e Movimento*, 12(4), 19-24.
- Paes R. R., Montagner, P. C., & Ferreira, H. B. (2009). *Pedagogia do Esporte: Iniciação ao treinamento de basquetebol*. Rio de Janeiro: Guanabara Koogan.
- Russel, W. D. (2002). An examination of flow occurrence in college athletes. *Journal of Sport Behavior*, 24(1), 83-107.
- Sena Junior, A. W. (2012). *Motivação e flow-feeling na corrida de rua*. Dissertação de Mestrado, Faculdade de Educação Física e Desporto, Universidade Federal de Juiz de Fora, Juiz de Fora, 2012.
- Sugiyama, T., & Inomata, K. (2005). Qualitative examination of flow experience among top Japanese athletes. *Perceptual and Motor Skills*, 100, 962-982.
- Swan, C., Keegan, R. J., Piggott, D., & Crust, L. (2012). A systematic review of the experience, occurrence, and controllability of flow states in elite sport. *Psychology of Sport and Exercise*, 13, 807-819.
- Triviños, A. N. S. (1987). *Introdução à pesquisa em ciências sociais: a pesquisa qualitativa em educação*. São Paulo: Atlas.
- Vlachopoulos, S. P., Karageorghis, C. I., & Terry, P. C. (2000). Hierarchical confirmatory factor analysis of the Flow State Scale in an exercise setting. *Journal of Sports Science*, 18, 815-823.

Received Oct. 30, 2014
Approved Mar. 16, 2015

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